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Tubular!!: Works for Tuba(s)

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Tubular!!: Works for Tuba(s)

Christian Bush

Honors Project

Submitted to the Honors College

at Bowling Green State University in partial fulfillment of the
requirements for graduation with University Honors

July 2021

Michael Laurello, College of Musical Arts, Advisor

David Saltzman, College of Musical Arts, Advisor

Introduction

Tubular!! is an album that was produced during the Spring and Summer of 2021. It was made possible through the support of many friends, colleagues, and mentors, and will serve as a cornerstone upon which to build my career as a performer and a recording engineer. The album and liner notes can be found on my website: <https://www.christianbush.com/tubular>. The appendix at the end of this paper contains screenshots of the website.

Section I: Research Questions

This project was conducted with two main questions in mind: Why commission and record new music featuring the tuba? What recording techniques can I use to produce lifelike and sonically pleasing tuba recordings of myself?

Section II: Literature Review

When deciding which composer I wanted to commission for this project, I looked at the repertoire for the solo tuba and tuba ensembles, and noticed a couple of things. For one, there are few pieces for tuba written by non-white, non-male composers, and second, there are few tuba trios in existence (Morris 2007; Institute 2021). These factors served as inspiration for me to commission composer TJ Cole to write a tuba trio for the project.

“TJ Cole (she/her, they/them) is a Philadelphia-based composer, originally from the suburbs of Atlanta. She has been commissioned by the Baltimore Symphony Orchestra, Carnegie Hall with Ensemble Connect, the Cincinnati Symphony Orchestra, the Louisville Orchestra, the New Haven Symphony Orchestra, Nashville in Harmony with Intersection, Time for Three with the Sun Valley Summer Symphony, Play On Philly!,

the Music in May Festival, Music in the Vineyards, the Lake Champlain Chamber Music Festival, One Book One Philadelphia, among others” (Cole 2021).

The remainder of the pieces on the album were chosen to promote the tuba as a solo instrument, and the tuba trio as an ensemble. When selecting other pieces for the album, I looked for works that I felt demonstrated the technical and lyrical capabilities of the tuba, while spotlighting the work of contemporary composers.

The other domain of this project was the recording. I conducted research on miking the tuba specifically and stereo miking, which is “a technique intended to create a spatial sound impression by the use of two or more channels” (DPA 2020). Several sources served as jumping off points. The dissertation, “Recording the Classical Tuba,” (Dine 2019) offered recommendations that come from a recording engineer who is also a tuba player. Although the dissertation does not have as exhaustive a list of microphone recommendations as other texts I read, or any recommendations for preferred stereo miking techniques, the general perspective of a tuba player was valuable in my decision-making. Other sources included *Modern Recording Techniques* (Huber 2018), which is more geared towards studio/pop music, *Classical Recording: A Practical Guide in the Decca Tradition* (Haigh 2020) and *Recording Orchestra and Other Classical Music Ensembles* (King 2017). These latter texts were both valuable for their recommendations with regard to microphone placement and recording in concert halls as opposed to studio settings.

Additional sources for this project included commercially produced albums, and the sheet music for the pieces I will be recording. All of these sources helped me to refine the sound of the album during the mixing phase in order to effectively demonstrate the tuba’s abilities.

Section III: Methodology

Hundreds of hours went into this project before the recording ever began. Along with research and planning in the Fall of 2020, I was practicing repertoire, rehearsing with my collaborators, and communicating with composers. I was also experimenting with microphone layouts. After reading through different texts that ranged from string quartet and orchestral recording to tuba-specific recording, I settled on a microphone layout that is commonly called “big AB, small AB” (King 2017). This blends the direct sound from a smaller, close-spaced pair with the more diffuse hall-sound from a wider-spaced pair farther back in the hall. After deciding on the “big AB, small AB” pattern, I began to experiment with spacing. The distance between the pairs, the distance between each microphone in each of the pairs, and the distance from the pairs to the tuba all affected the sound in drastic ways. The spacing I ended up deciding on was the small AB pair being eight feet off the ground and twelve inches apart, just behind the tuba. The big AB pair was fifteen feet in front of the small AB pair, sixty-five inches off the ground, and eight feet apart. Through experimentation I found this setup to be the most accurate and acoustically pleasing representation of the tuba’s sound. A diagram of the setup can be seen below in figure 1.

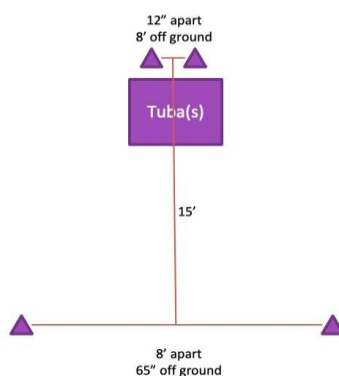


Fig. 1 The diagram I created for the microphone layout

Next, I began recording. The general process for most of the pieces was to schedule a recording session, drive to the recording location, set up, record for a few hours, tear down, and drive back. After those recording sessions, I would splice together different segments of audio to make one cohesive “run” of the piece and then send it to one of my advisors, Professor David Saltzman. Professor Saltzman would then listen and give feedback and recommendations about what to change. From there I would go back and repeat the process until we were both satisfied. This part of the project took an immense amount of time, effort, and planning. Managing four people’s schedules (my trio and my assistant recording engineer) and a hall schedule in the middle of a pandemic was a major task unto itself.

After I had a completed run of each piece, I sent the recordings to my other advisor, Professor Michael Laurello. Professor Laurello then gave me advice and recommendations on how to mix the pieces to make the tracks sound more cohesive, and fix some balance issues. After some back and forth, Professor Laurello mastered the album for me. While all this work was going on, I was also designing the website (pictured in the appendix).

Section IV: Addressing the Research Questions

Before the literature review, I asked a couple questions. First, why commission and record new music featuring the tuba? I will outline four main reasons. The first is a lack of repertoire. Although there has been more writing for the tuba in the past century, other instruments in the orchestra, like the violin, have been around longer and have historically been taken more seriously as soloistic instruments. Second, in addition to a general need for more repertoire, I specifically see a need for more trios in the tuba repertoire. When I formed my trio,

the Johnson Three, in the summer of 2020, we quickly noticed that there was not much repertoire out there for us to play.

A third important reason I see to commission and record new tuba works is a lack of diversity. Most Western Art Music, historically and presently, has been written by cisgender white men. Tuba music is certainly no exception. We live in a diverse world, and I believe that the compositions musicians play should be more inclusive of underrepresented composers. The final reason I see to commission and record new music for the tuba is a lack of quality recordings. There are plenty of recordings of tuba out there that do not adequately portray the tuba's capabilities because the recordings are not well recorded and often lack clarity of sound.

The next question I asked was: "What recording techniques can I use to produce lifelike and sonically pleasing tuba recordings of myself?" The microphone setup I decided to record with was the "big AB, small AB" (King 2017) setup. The diagram can be found on page three, figure 1. This setup was arrived at through a combination of research on recording techniques and experimenting with microphone spacing. I believe the sound that I accomplish with the microphone setup in this album represents me well as a tuba player and a recording artist.

Section V: Limitations/Differences from Proposed Project

First, I want to discuss some of the limitations that shaped this project. The first limitation was access to equipment and recording spaces. When I first envisioned this project, I imagined being able to test many different microphone types and configurations in multiple halls to realize my ideal tuba recording sound. Unfortunately, because of the Covid-19 pandemic, it became apparent that I would not be able to easily gain access to the halls on campus or access the microphones in the College of Musical Arts. Because of this, I had to produce a sound that I was happy with using only four microphones. This forced me to focus on listening to stereo pairs

without relying too much on spot microphones. I think this limitation ultimately helped me to get more creative in my techniques and experimentation.

The other limitation was time. Even with the extension I received on this project, a little over six months is a quick turnaround time for a project of this scale for a full-time student. This limitation also caused me to get creative and figure out ways to edit that saved me time. I became more skilled at editing audio because I often did not have enough time to go back to the hall with my collaborators to re-record sections, so I had to edit the material I already had.

As with most other things during the Covid-19 pandemic, this project did not go as I originally planned. The project was originally slated to be completed in May of 2021, but due to the size of the project and the amount of work involved, I needed to extend the project into Summer 2021 for completion in July. Covid was a contributor to the timeline problems, but other problems included the scope of the project and my own sense of my availability. The project ended up being even more time consuming than I had planned for and this caused me to fall behind with my timeline.

The next difference has to do with my research questions. When I first submitted the proposal, my original second question was “What are the most accurate and acoustically pleasing techniques for recording tuba?” This question changed to “What recording techniques can I use to produce lifelike and sonically pleasing tuba recordings of myself?” After setting out to test configurations I realized that my original question was too difficult to answer because of it would require objective measurements to be answered, which would have gone beyond the scope of the project. I was also not able to test as many microphones in as many configurations as I had set out to in the proposal so I did not feel I could answer what was “most accurate and acoustically pleasing.” Hundreds of different microphones in a thousand different configurations

could be tested and you still wouldn't truly be able to answer the question of which technique was best because the answer is ultimately subjective. Recording is just as much art as it is science and one person's ideal sound might be totally different from another's. I figured I could not answer which techniques were best, but I could, through research and experimentation, figure out which techniques using my limited equipment would make a sound that I thought best represented me.

The final difference from my proposal is the mastering of the album. In the proposal, I set out with the intention to work with Professor Laurello in order to learn how to master, and master the album with him. Because of the adjustments to the timeline, and the amount of work I already had to do for the rest of the project, I was not able to master the album myself.

Section VI: Conclusions

The main output of this project was the album and liner notes that are found on my website linked at the top of this paper. The album will serve as a useful tool for me to market myself as both a tuba player and a recording engineer. Although further study can be conducted into recording techniques for the tuba, I did find ways to record myself that I feel represent me well, and I will be able to use these recording techniques I have developed during this project to better record myself and other tuba players. The last important output of this project is the addition of a new piece from a member of an underrepresented group in the field. *Happy Harp* will hopefully carve out a place in the tuba repertoire and be performed for years to come.

Appendix: Website Images

Tubular

As part of the requirements to graduate with honors at BGSU, students are required to complete an interdisciplinary project that showcases what they've learned during their degree. This album is that project. This project was a lot of work and it wouldn't have been possible without the hard work of many friends, colleagues, and mentors. Below are the tracks from the album with information along with some pictures from the project. At the bottom of this page there is some more specific thank yous and some more information on how the project was executed. I hope you enjoy the album!





My tuba in the hall before a recording session

Zinnia

"Zinnia is a piece for tuba and live electronics composed in the spring of 2018. Zinnias are popular garden flowers because they come in a wide range of flower colors and shapes. This work takes the sound of recorded tuba and manipulates it in ways that change the timbres and colors, mimicking the natural variety of zinnias in the wild. Zinnia was realized through Pure Data and Logic Pro X."

-Chace Williams

I first met Chace when he recorded my Sophomore Recital at BGSU. The next semester, I joined the recording services team at BG and Chace became my coworker. I remember the first time I worked with him because he invited me to go to Waffle House after the concert. I was nervous to go hang out with a handful of grad students and Seniors that I didn't really know, but I'm glad that I went because I made a lot of new friends that night. Chace ended up being a great friend, but it turns out he's also a great composer. Much like the Zinnias this piece represents, people come in "a wide range of flower colors and shapes" and I'm lucky to have met and worked with a great variety of people in my time at BGSU, Chace included. *Zinnia* is a great "big tuba" piece in that it lets the low register shine. The electronics move between background and foreground and when the electronics shine through they give the piece an other-worldly feel.



Ludus

“Ludus exploits the immense technical, dynamic and expressive potential of the tuba. In the first and third movements, the constant interplay of the three tubas creates the illusion of one “super” player with endless flow of breath and vertiginous technique. In the middle movement, the dynamic and expressive resources of the instrument are called upon to fashion, through explosive exclamation and abrupt changes of mood, a recitativo-arioso dramatic in nature. Ludus was commissioned by Custom Music Co., and is dedicated to the First International Tuba Symposium 1973, during which it was first performed by Daniel Perantoni, Robert Tucci and J. Lesley Varner.”

- Vaclav Nelhybel

Ludus is one of those pieces that I heard for the first time and then went back and listened to it two or three times immediately after. This work follows the traditional three movement fast-slow-fast format, but that's about all that's traditional about the piece. The work utilizes intense chromaticism and dissonance throughout that gives the piece an almost scary feeling. I hope you enjoy listening to *Ludus* as much as we enjoyed playing it.



AJ and Noah warming up as Robbie sets up microphones



The Johnson Three tuba trio in our recorded performance for the BGSU Wayland Chamber Music Competition at which we were runners up in the undergrad division

Ludus Mvmt I - Allegro

The first movement has essentially one line going throughout but that line is picked up and passed around the three parts. Some notes are played by all three players and others are played by two or one but there is actually no harmony or dissonance at all for the first half of the movement. The movement is all unison with the interest coming from when different players drop in and out of the texture. Suddenly, an ascending chromatic line starts blurring the unison sound as the tubas work together to build clusters before returning to unison playing for the rest of the piece.



Ludus Mvmt II - Agitato, Molto Rubato

The second movement of *Ludus* was the most challenging for us to learn. The movement requires a lot of communication between parts and requires you to know the other two parts intimately so you don't place a note in the wrong place. In contrast to the first movement, this movement opens with some chromatic dissonance and is mostly homophonic with a lot more chords. Not all of the chords are pretty though. Much of the harmony is minor or augmented chords which give this slow movement a more menacing feel than a sweet one.



AJ and Noah as we prepare to record for the Wayland Chamber Music Competition



The Johnson Three on their way to a recording session

Ludus Mvmt III - Molto Vivo

The third and final movement of *Ludus* is the fastest of the three. It is similar to the first movement in that there is not much harmony or dissonance as the tubas trade the line around. This movement utilizes many octave unisons, giving it a more spaced out and powerful feel than the first. The piece ends with an ascending chromatic line that overlaps building clusters and then finishes with the three players in unison working from G4 down to G1.

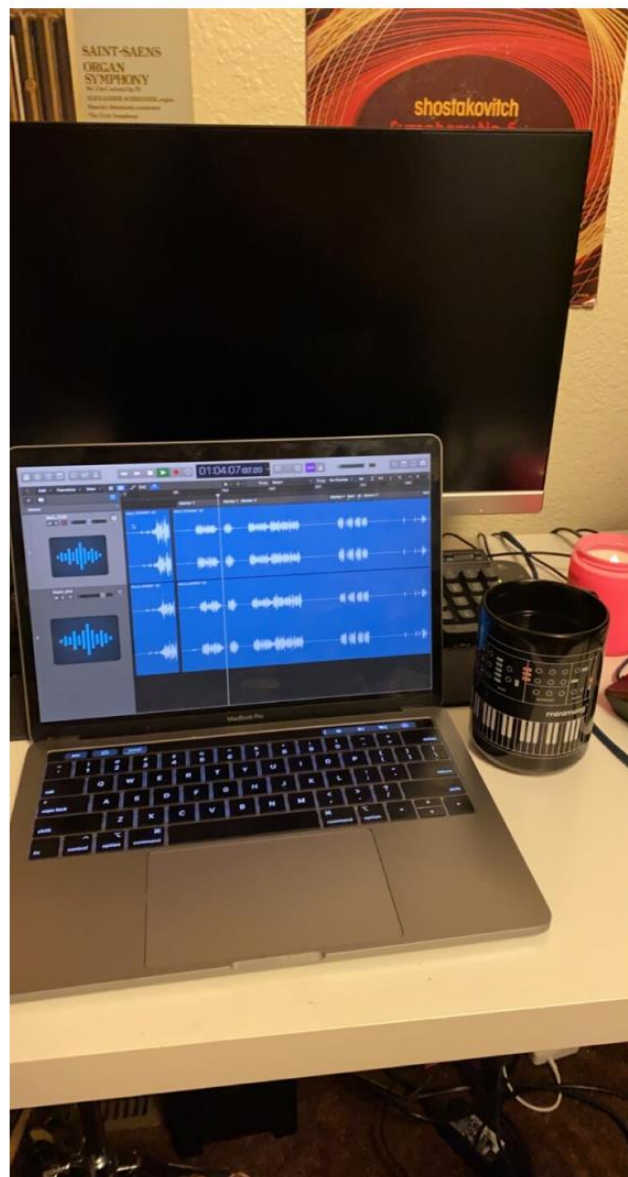


Three Furies

"Three Furies for Solo Tuba was composed in January and February of 1993 at the request of tubist Mark Nelson, to whom the work is gratefully dedicated. The surprising - and, indeed, remarkable - flexibility possessed by the tuba inspired a music that is immediate, good-natured and fun, requiring of the performer both keen musicianship and physical stamina."

-James Grant

I first heard *Three Furies* by James Grant performed by Brendan Ige during a recital he gave at Bowling Green my Freshman year. I was so enamored by the piece that I went and started looking at it later that day. It quickly became apparent that the piece was beyond my skill level, but I was determined to perform it before I left BGSU. I finally performed *Three Furies* on my senior recital in the Spring of 2021.



My setup for editing audio (coffee was often a necessity)



The view from my perspective during recording sessions

Fury I - Decidedly Jocular

"Fury I is marked 'decidedly jocular' and is a pleasant ramble through the registers of the tuba, featuring angular arpeggios and tonguing demands that one does not usually associate with the instrument."

-James Grant

This movement opens immediately with a warning to any tuba player that decides to look at the score. The first bar has an octave and a half jump from the top of the staff to below the staff that certainly intimidated me at first. With much practice, I eventually overcame that octave and a half jump in the first bar. The problem was that there are another seventy-one bars after the first one that aren't much easier. The movement has thirty-second notes, flutter glisses, dynamics from piano to fortissimo, and a three and a half octave range. This movement shows off the abilities of the tuba in only a few minutes, but it does so in a truly entertaining way.



Fury II - Very Clean / Gently Inebriated

"Fury II, in form somewhat reminiscent of a minuet with trio, contrasts series of long, arching arpeggiated figures with an amicable waltz marked 'gently inebriated.'"

-James Grant

The second of the *Three Furies* is probably my favorite of the three. The piece opens with a bombastic section that the player is instructed to play "very clean". This section is quickly followed by a long middle section that is labelled "gently inebriated". The inebriated section in particular was my favorite to play with in the piece. It's fun to experiment with ways to make your tuba playing sound drunk. I ended up moving valves slowly with stepwise movements so they sound dirtier and I played around with the time to make the line feel like a drunk person stumbling around. The bombastic line from the beginning of the piece returns and then suddenly grinds to a halt at the end of the piece like a drunk person getting their second wind and then passing out.



Hanging out with Appa in my bedroom / practice room / office during the pandemic



It's easier than taking two trips, right?

Fury III - Relentless Throughout

Fury III is relentless and powerful, exploiting the full dynamic and articulative range of the tuba. Again, the performer is met with virtuosic demands not normally encountered in the tuba literature.”

-James Grant

I've been told once or twice in my time at BGSU that I sometimes tend towards an “aggressive” sound. Naturally, the third of the *Three Furies* drew me in. The movement opens suddenly with two forte sixteenth notes, then an entire bar of rest followed by a mezzo-piano eighth-note. This creates a very bipolar feel right off the bat. The piece plays with this bipolar feel throughout, but it always feels angry. Whether that anger is screaming or seething, it is “relentless throughout”. This movement is somewhat cathartic to play and really gives you chance to let out some aggression as we all need to sometimes. The movement is an exclamation point on the end of an exciting piece.



Happy Harp

“Happy Harp was a piano piece I wrote as a child, in an attempt to imitate the harp. This version has been arranged and reimagined for three tubas, roughly 20 years after it was originally composed.”

-TJ Cole

I first reached out to TJ in the fall of 2020 looking to commission a piece for tuba trio. I had a couple reasons for commissioning a tuba trio from TJ. First, I had formed the Johnson Three so that we could play *Ludus*, but it turned out that there weren't a ton of pieces for tuba trio out there. The second reason was that there aren't a ton of pieces for tuba that aren't written by straight white men. I decided on TJ after listening to some of their pieces, in particular *Playtime*. Happy harp alternates between slower sweet playing and fast hocketing between the three players. I told TJ that we would play whatever they wrote, but not to hold back. They did not, and I am thankful for that.



The Johnson Three during a recording session



Thomas during a recording session

Duh Suite

"*Duh Suite* for Two Tubas and Drums was commissioned in 1998 by tubists Kelly O'Bryant and Dennis Askew for their new CD, 'Carolina Morning'. They wanted a multi-movement work that would show off their particular talents. So I asked them how high, low and fast I could write and they gave me the green light to challenge them. I added a drummer for variety and to propel what were to be rhythmic/groove pieces."

-Jim Self

I was inspired to play *Duh Suite* after hearing it on the album *Full Tilt* by the Transatlantic Tuba Connection. The tuba player that gave me the album and learned the piece with me, Noah Laabs, had studied with Mike Forbes, one of the two tuba players in the Transatlantic Tuba Connection, in high school. The piece utilizes a pretty unique instrumentation: Two tubas and a drum set. The piece was a blast to learn and it was a no brainer to add to this album when I was deciding on pieces to include.

Duh Intro

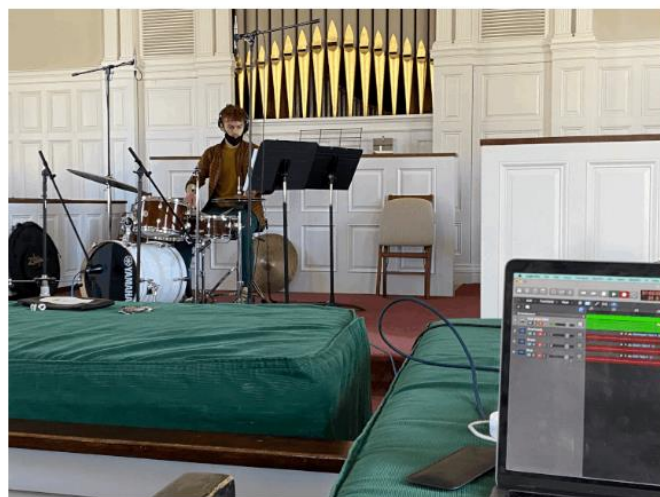
“Duh Intro, is a fast contrapuntal piece with declamatory fanfares and a four-octave range.”

-Jim Self

Duh Intro opens up the suite with technical runs not typically heard on the tuba. Although they are challenging, they are quite idiomatic to the tuba. This is the benefit of playing a tuba piece written by a tuba player. The movement is energetic with a couple little cadenzas for the tubas thrown in to spice things up.



Where Noah and I sat while recording Duh Suite



Thomas laying down some sick beats

Duh Odds

“Then comes *Duh Odds*, a fast, relentless series of odd-meter measures with a variety of tom-toms providing a driving beat (don’t be surprised if you hear some Stravinsky).”

- Jim Self

Duh Odds is my personal favorite of all the movements in *Duh Suite*. The movement features mostly odd time signatures, alternating between 3/4 and 3/8. When you least expect it some 2/4 is thrown in to keep things fresh. The end of the piece changes up the meter again with a few 5/8 bars. The movement is rhythmically challenging and very exciting.

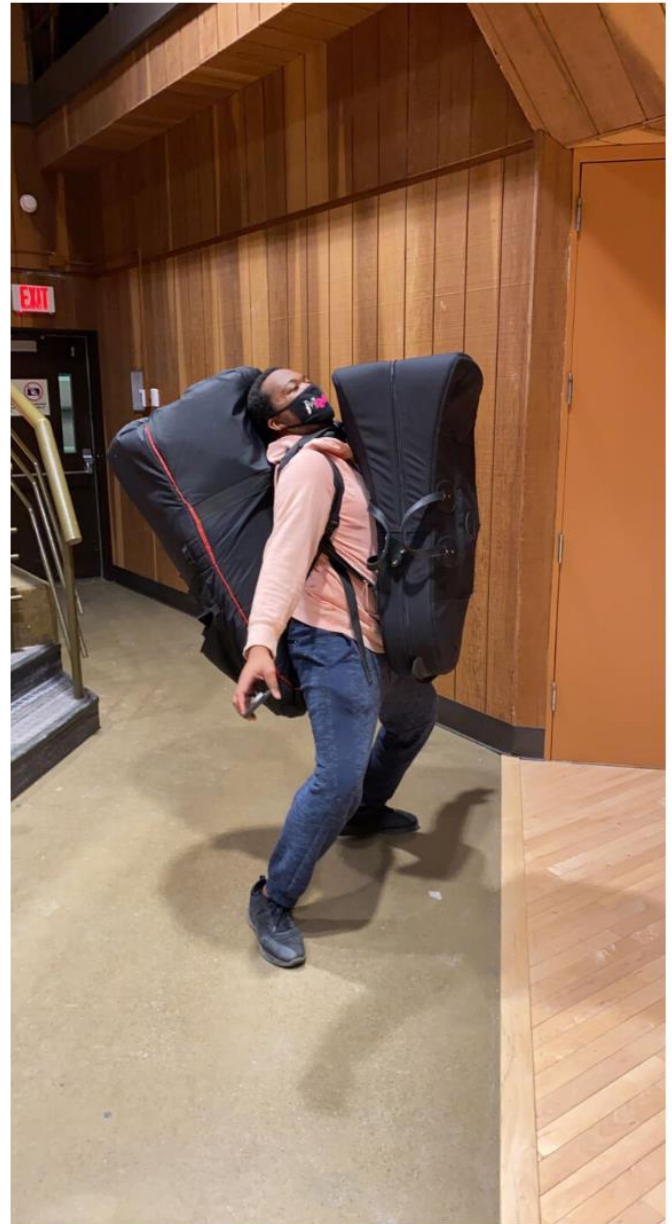


Duh Fool Professors

“Movement three is a slow, jazzy ballad named *Duh Fool Professors*. The percussion accompaniment is all spacey metal sounds (cymbals, triangles and the like), over wide-interval melodies in the tubas.”

-Jim Self

The slowest and most expressive movement of the bunch, *Duh Fool Professors* showcases the tuba's lyrical ability. The drum set plays a secondary role, gently supporting the tubas as they play melodies over the cymbals. The tubas take turns throughout the movement joining the drum set with rhythmic accompaniments or playing soaring melodies on top. This movement was arguably the hardest to nail down. Making the “wide-interval melodies” sound smooth is pretty challenging, but it was well worth the effort.



This really can't be good for our backs



Appa and Robbie having a deep conversation while I'm editing

Duh Blooze

"Duh Blooze, calls for lots of laid-back slippin' and slidin' and much trading of blues melodies and bass lines - while the drummer plays brushes."

-Jim Self

I think every tuba player, deep down wants to play jazz and slip and slide around bass lines. Jim Self gave us the opportunity to do so in this movement. Noah and I took some liberties glissing some notes and playing around with the time and we had a lot of fun doing it. Thomas laid down a mean shuffle and we really got to groove with this movement.

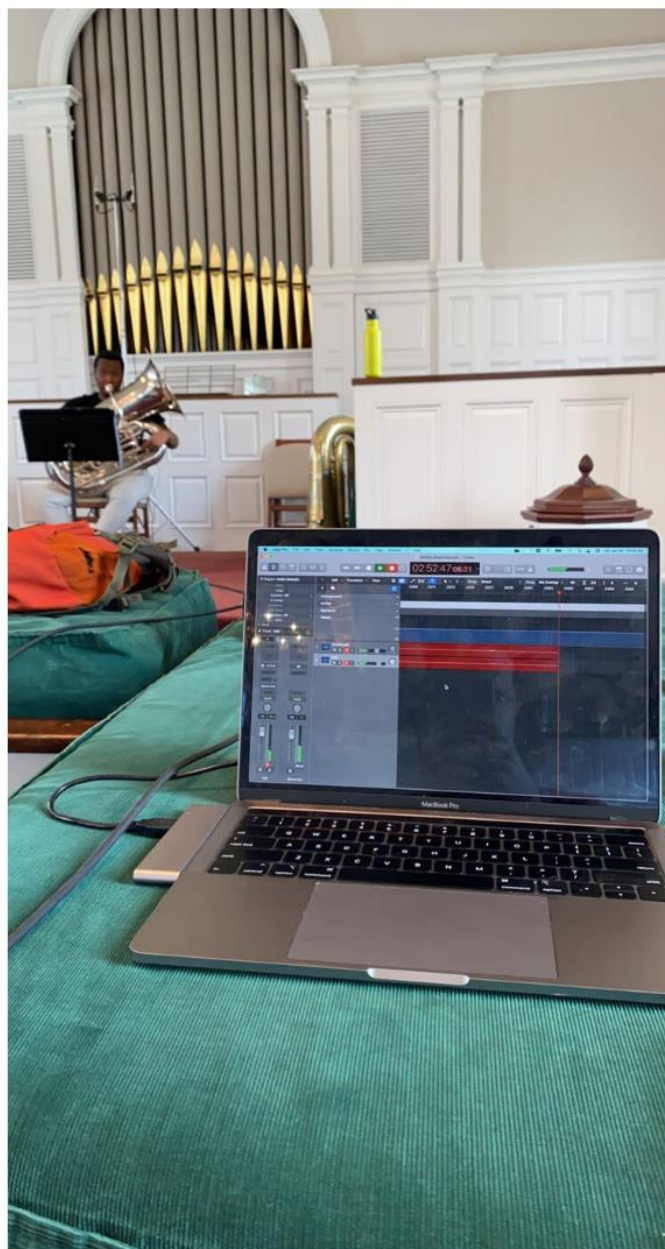


Duh Yaz

“In *Duh Yaz* the tubas are called upon for some super acrobatics. After a scary intro, the group moves into a jazz/rock and samba feel for ‘the tune’. The middle section is a kind of development section with each tuba taking the limelight, after which there is a return to the tune and a fade ending.”

- Jim Self

The most technically challenging of the movements, *Duh Yaz* is truly acrobatic as Jim Self claims. Lots of whole step dissonance gives this movement a tense feel that keeps the listener on the edge of their seat until a slightly less aggressive middle section lulls the listener into a false sense of security. The tense dissonance returns again and then the calm returns followed by a brief improvisatory section at the end as the piece fades out.



AJ playing in the hall



Our covid rehearsal space/basement

Duh KoDa

“The finale is, of course, called *Duh KoDa* (an acronym based on the initials of the soloists). The music of this movement returns some of the fast scales from the first movement and more wild, declamatory material for all. Like all the movements, it emphasizes interesting and varied rhythmic patterns”

- Jim Self

This movement brings back the scales from *Duh Intro*, but this time they overlap between the tubas, first playing the same scales offset by a bar, then playing on top of each other a fifth apart. The piece ends in 5/8 time with the tubas playing chromatic rhythmic lines in opposite directions. The last two bars are unison in octaves which gives the ending a very powerful feel, putting a definitive exclamation point on the end of this very exciting work.



Thank You!

From the bottom of my heart I need to thank all of the people that made this project possible. I'll try to keep this brief, but there are a lot of people to thank. First, I need to thank you, the listener for checking out my album. I hope you enjoyed it. Next, my parents: Nancy Stohs and David Bush. Without their support (emotionally, financially, and otherwise) I would not be where I am today. They've never stopped believing in me and supporting my passion. As much as we all enjoy unaccompanied tuba, an album involving only me and my tuba would have been less fun to listen to, and even less fun to record. I need to thank my musical collaborators: Anderson Johnson, Noah Laabs, and Thomas Worrel. I'm thankful that I have such great friends who also happen to be killer musicians. Next up, I want to thank my old roommates Jared Saenz, Sam Beery, and Robbie Dunham for putting up with me practicing this repertoire in our apartment. In particular I need to thank Robbie, who was the recording engineer for the project. I am incredibly lucky to have had such great roommates and friends. Another heartfelt thank you goes out to TJ Cole. TJ agreed to take on a commission to write *Happy Harp* for me and my trio and it was amazing getting to work with such a talented composer. I also want to thank Jim Self, James Grant, Chace Williams, and Brian Doughty (Cimarron Music Press) for allowing me to record the pieces on this album. I want to thank Bill Woodruff and all of the members of First Presbyterian Church Maumee for allowing me to use their beautiful chapel for that purpose. This project would not have been possible financially if it weren't for the Hansen Fellowship and the support of Dotty and Duwayne Hansen. Missy D'Angelo made the radical cover art you saw at the top of this page and the back cover to your right. Last, but certainly not least, I need to thank my advisors for this project: Michael Laurello and David Saltzman. Professor Saltzman; thank you for the years of lessons, rehearsals, fundamentals sessions, and trips to the Chinese buffet as well as the nit-picky (but helpful) comments on the edits of the pieces on this album. I wouldn't be the tuba player that I am or the person that I am without your help and guidance for the last four years. Mike; It's been a blast to work with you for the past few years. You've been an inspiring teacher, a supportive boss, and a very patient mentor.

Below you can read more about the process of producing this album and about the honors project.



1. Zinnia (5:22)
Chace Williams
Ludus
Vaclav Nelhybel
Christian Bush - Tuba 1
Anderson Johnson - Tuba 2
Noah Laabs - Tuba 3
2. Allegro (2:00)
3. Agiato, Molto Rubato (3:59)
4. Molto Vivo (2:22)
Three Furies for Unaccompanied Tuba
James Grant
5. Fury I - Decidedly Jocular (3:21)
6. Fury II - Very Clean/Gently Inebriated (4:07)
7. Fury III - Relentless Throughout (4:10)

8. Happy Harp (4:02)
TJ Cole
Christian Bush - Tuba 1
Noah Laabs - Tuba 2
Anderson Johnson - Tuba 3
Duh Suite
Jim Self
Christian Bush - Tuba 1
Noah Laabs - Tuba 2
Thomas Worrel - Drum Set
9. Duh Intro (1:42)
10. Duh Odds (2:40)
11. Duh Fool Professors (2:32)
12. Duh Blooze (3:35)
13. Duh Yaz (4:14)
14. Duh KoDa (1:40)

Recording/Mixing Engineer - Christian Bush
Assistant Recording Engineer - Robert Dunham
Mastering Engineer - Michael Laurello
Cover Art - Missy D'Angelo





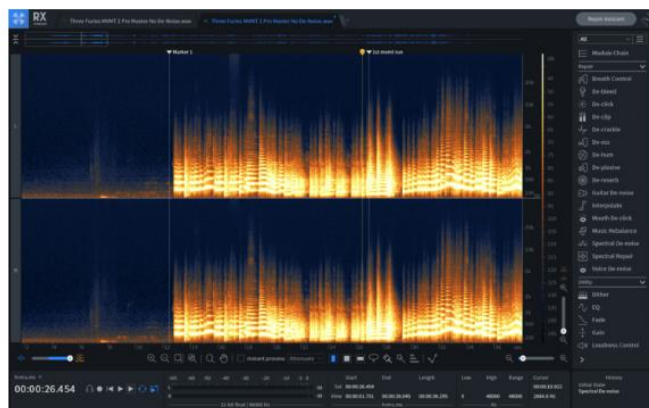
A look at the editing process for the first Fury

Honors Project

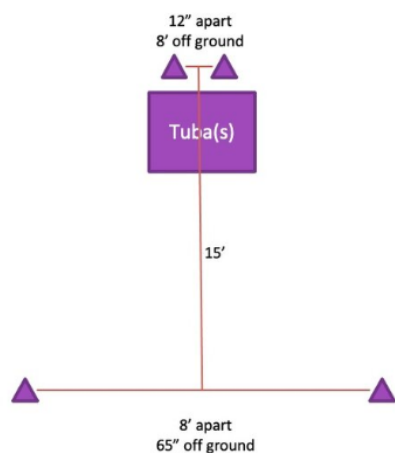
As a student in the honors college at Bowling Green State University, I was tasked with completing an interdisciplinary project that highlights my work at the university. It was a no-brainer for me to create *Tubular* to fulfill that requirement. As a music education major with a minor in recording technology and aspirations to perform, producing an album felt like the perfect way to demonstrate my achievements in my time at BGSU. Setting out on this project, I decided on two questions to answer. These questions were; Why commission and record new music featuring the tuba? and; What recording techniques can I use to produce accurate and acoustically pleasing tuba recordings of myself?

Why Commission/Record New Works?

The tuba is an often overlooked instrument. People imagine the tuba as a goofy oom-pah instrument that is barely capable of quarter notes. Unfortunately, this perception stunted the tuba's growth as a serious musical instrument for a while. The first concerto wasn't written for the instrument until the middle of the 20th century, over a hundred years after it was patented. I wanted to record and commission newer works for the tuba in order to add to the repertoire and show the world that there's more to the tuba than just basslines, the Vaughan Williams Concerto, and the Hindemith Sonata (not that all those are that bad). One specific tuba group that I believe needs more pieces to play is the tuba trio. The Johnson Three Tuba Trio was looking into repertoire to play when we first started working together and we quickly noticed there weren't nearly as many trios as there were solos, duets, or quartets. On top of showing off the tuba's abilities and adding more trios to our repertoire, I wanted to commission a new work for two other reasons. First, I believe music is a living, breathing art form that needs new performers and new works to stay alive. I love Mahler just as much as the next guy, but all music was new at some point and if we never commission new music, we'll never find the next masterpiece and our art form will die. Another reason for commissioning a new work is representation. I believe that music, as all other things in life, benefits from varied perspectives and experiences and, unfortunately, famous works for tuba (and famous works in general) are predominantly written by straight, white men. That's why I commissioned TJ Cole to write a trio for this album.



The spectrogram of the first fury in Izotope RX, the software I used to de-noise the pieces



The microphone layout diagram that I used to record the album

What recording techniques can I use to produce accurate and acoustically pleasing tuba recordings of myself?

I originally set out on this project with a different question in mind: What are the most accurate and acoustically pleasing techniques for recording tuba? To definitively answer this question you would need to have objective ears and, as far as I know, no such ears exist. Another complication in finding an answer to this question was my limited access to space, time, and equipment. In an ideal world I would have made sample recordings in many different spaces with many microphones in many configurations. Unfortunately, I only had access to my four channel interface, a few pairs of microphones, and one space. Although there isn't a lot of it, there is information out there on recording tubas. After reading through a few different sources ranging from tuba specific recording techniques to classical chamber recording techniques, I landed on a configuration that I believed would yield the best results in my circumstances. The layout involves two pairs of omnidirectional microphones: One pair used as overheads to capture the direct sound of the tuba(s), and one pair was placed about a third of the way back in the hall spaced far apart in the room to capture the sound of the hall. After some experimentation with spacing, I settled on the layout you see to the left. This produced a sound that I believe accurately represents me as a tuba player. It gives the tuba enough clarity as to not sound too "tubby" and also captures the wonderful sound that the tuba can make in a nice hall.

The Process

I want to take just a little time here to explain the actual process of producing this album start to finish. After all of the research and planning done in the fall of 2020, January of 2021 I first started tracking for the album. The general process for most of the pieces was to schedule a recording session, drive to location and set up, record for a few hours, then tear down and drive back. After I had those recordings, I would edit them together to make one cohesive run and then send it to one of my advisors: David Saltzman. Professor Saltzman would then listen and send me a marked up score with things that he wanted changed. From there I would go back and repeat the process until we got a complete run we were both happy with. As you can imagine, this part of the project took an immense amount of time. After we had edits of the album we were happy with, I used Izotope RX to de-noise the pieces and then sent them to my other Advisor: Mike Laurello. Mike then gave me advice on what to change to make the tracks sound more cohesive and fix some balance issues and then Mike Mastered the album for me. While all of this work was going on I was also working on this website and preparing to defend the project in order to graduate with honors. I can truthfully say that no other project has been as taxing on me as this one, but I am proud of the work I was able to accomplish and again, incredibly thankful for all of the help and support I received from all of those directly and indirectly involved in the making of this album. I hope you enjoyed the album!



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